

Claims

- [c1] 1. A water-soluble hotmelt adhesive, comprising as components:
- (A) 40 to 70 % by weight of at least one homopolymer or copolymer with free carboxylic acid groups based on one or more ethylenically unsaturated monomers;
 - (B) 15 to 45 % by weight of at least one water-soluble or water-dispersible polyurethane;
 - (C) 10 to 45 % by weight of at least one inorganic or organic base; and
 - (D) 0 to 20 % by weight of one or more further additives;
- wherein the sum of said components (A) – (D) is 100 % by weight.
- [c2] 2. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a vinyl acetate/crotonic acid copolymer with an acid value from 10 to 200 mg KOH/g as measured in accordance with ASTM D 974.
- [c3] 3. A water-soluble hotmelt adhesive according to claim 1, wherein component (B) comprises a nonionic polyurethane with a viscosity of 500 to 80,000 mPas at 150°C when measured in accordance with ASTM D

3336–88 using a Brookfield Theromcell device having a No. 27 spindle.

- [c4] 4. A water-soluble hotmelt adhesive according to claim 1, wherein component (C) comprises an alkanolamine containing one or more alkanol radicals and wherein the carbon chains in the alkanol radicals are the same or different in length and each contain 2 to 6 carbon atoms.
- [c5] 5. A water-soluble hotmelt adhesive according to claim 1 having a viscosity from 1000 to 20,000 mPas at 120°C when measured in accordance with ASTM D 3336–88 using a Brookfield Thermocell device having a No. 27 spindle.
- [c6] 6. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a copolymer of vinyl acetate and an ethylenically unsaturated aliphatic comonomer containing at least one carboxyl group per molecule.
- [c7] 7. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a copolymer having an acid value of from 20 to 150 mg KOH/g when measured in accordance with ASTM D974.
- [c8] 8. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises from 50 to 60 % by

weight of the water-soluble hotmelt adhesive.

- [c9] 9. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a vinyl acetate/crotonic acid copolymer having a softening point in the range of from 80 to 130 degrees C.
- [c10] 10. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a vinyl acetate/crotonic acid copolymer having a molecular weight (M_n) in the range of from 10,000 to 60,000.
- [c11] 11. A water-soluble hotmelt adhesive according to claim 1, wherein component (B) comprises from 25 to 35 % by weight of the water-soluble hotmelt adhesive.
- [c12] 12. A water-soluble hotmelt adhesive according to claim 1, wherein component (B) comprises at least one water-soluble or water-dispersible polyurethane prepared by a method comprising reacting at least one diisocyanate and at least one polyethylene oxide polyol.
- [c13] 13. A water-soluble hotmelt adhesive according to claim 12, wherein at least one diisocyanate is tetramethyl xylene diisocyanate.
- [c14] 14. A water-soluble hotmelt adhesive according to claim 1, wherein said at least one water-soluble or water-

dispersible polyurethane is non-ionic.

- [c15] 15. A water-soluble hotmelt adhesive according to claim 1, wherein said at least one water-soluble or water-dispersible polyurethane (B) contains ionic groups.
- [c16] 16. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) is in the form of a salt.
- [c17] 17. A water-soluble hotmelt adhesive according to claim 1, wherein component (C) comprises triethanolamine.
- [c18] 18. A water-soluble hotmelt adhesive according to claim 1, wherein component (A) comprises a vinyl acetate/crotonic acid copolymer, component (B) comprises a non-ionic water-soluble or water-dispersible polyurethane, and component (C) comprises triethanolamine.
- [c19] 19. A process for producing a water-soluble hotmelt adhesive according to claim 1, comprising:
 - a). mixing, at a temperature from 70°C to 150°C, component (A), component (B) to form a homogeneous melt;
 - b). combining, at a maximum temperature of 80 to 100°C, component (C) with the homogeneous melt,
 - c). optionally adding component (D) in either or both of steps a) and b) with the total amount of (D) being 0 to 20 % by weight of the adhesive and the sum of said compo-

nents (A) – (D) being 100 % by weight of the adhesive;
and
d). stirring the mixture until a homogeneous blend
forms.

[c20] 20. A process for bonding a first substrate comprised of paper or textile fabric to a second substrate comprised of paper or textile fabric, said method comprising using as adhesive a water-soluble hotmelt adhesive according to claim 1.

[c21] 21. A process according to claim 20, wherein said method produces an at least two-ply hygiene paper.

[c22] 22. A hygiene paper comprised of at least two plies of tissue paper and a water-soluble hotmelt adhesive according to claim 1.

[c23] 23. A textile laminate comprising at least two layers of textile fabric and a water-soluble hotmelt adhesive according to claim 1.

[c24] 24. A moisture-tackifiable paper comprising a first paper layer and a water-soluble hotmelt adhesive according to claim 1.

[c25] 25. A process for producing a paper laminate, comprising applying a water-soluble hotmelt adhesive according

to claim 1 to a first layer of paper and laminating at least one second layer of paper onto the adhesive side of the first layer of paper.

[c26] 26. A process for producing a moisture-tackifiable paper, comprising applying a water-soluble hotmelt adhesive according to claim 1 to at least one side of the paper.

[c27] 27. A process for producing a textile laminate, comprising applying a water-soluble hotmelt adhesive according to claim 1 to at least one surface of a first textile fabric and applying at least one second textile fabric to the adhesive side of the first textile fabric.

[c28] 28. The process of claim 27, comprising the additional steps of sewing together the textile laminate and removing the water-soluble hotmelt adhesive from the textile laminate by washing with water.